

use of inexpensive and scalable substrates thus overcoming the drawbacks of the prior art (including Little et al).

With reference to claim 6 of the present invention the examiner states that *Little teaches that the semiconductor thin film material comprises GaN semiconductor polymer (paragraph 0054)*. With respect, this statement is not correct – GaN is not a polymer material. In the present specification (paragraph 0020) GaN is mentioned as an inorganic alternative to the semiconductor polymer thin film material but in the context that it is deposited on a non-semiconductor substrate unlike teachings of Little et al. where all semiconductor layers are formed epitaxially on either GaAs or InP substrates.

With reference to claims 7 and 8 it should be noted that the size of conventional resonant cavities in light sources and detector employed by Little et al is larger than the wavelength at which they operate. This is different from the *microcavities* of the present invention which are less than the wavelength and therefore specifically applicable to a thin film semiconductor layers on non-semiconductor substrates (paragraphs 0023 and 24 of the present specification).

With reference to the original claim 9 (now cancelled and incorporated into claim 1) the examiner states that Little et al teaches the use of a planar optical waveguide. With respect, this is factually incorrect. The structure in Fig. 2 of Little et al that is referred to by the examiner represents a resonant cavity photodetector with front and back reflectors being a distributed Bragg reflectors. It does not contain a planar waveguide, the definition of the latter being a structure that enables propagation of light in lateral direction i.e. in the plane of the substrate. In Fig. 2 the light enters the photodetector structure vertically. There is no propagation of light in lateral direction let alone the interaction of the evanescent field of that light with the biological substance under test. Therefore, Little et al does not disclose the use of a planar waveguide.

Claims 10, 13 and 14 has been amended taking into account examiner's objection contained in item 15 of the office action.

Please do not hesitate to contact the undersigned if further information/action is required.

Sincerely,



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